



In re Patent Application of:  
**OLOFSSON ET AL.**  
Serial No. 09/582,637  
Filed: October 20, 2000

line test circuitry associated with said active splitter circuitry for transmitting a test signal on the line based upon at least one of an event and receipt of a test request signal, said line test circuitry having associated therewith a unique identity code transmitted with the test signal.

35. An active POTS splitter according to Claim 34 wherein the test signal is for a specific line test.

36. An active POTS splitter according to Claim 34 wherein the test signal is in a general form for use with a range of different line tests.

37. An active POTS splitter according to Claim 34 wherein the test signal comprises at least one pulse.

38. An active POTS splitter according to Claim 34 wherein the test signal comprises at least one step.

39. An active POTS splitter according to Claim 34 wherein the test signal comprises at least one chirp.

40. An active POTS splitter according to Claim 34 wherein the test signal comprises a series of sinusoidal signals of predetermined amplitude, each sinusoidal signal having a different frequency and the series thereof spanning a frequency range for which the line is to be tested.

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41. An active POTS splitter according to Claim 40 wherein each sinusoidal signal has a predetermined duration to facilitate synchronization and measurement.

42. An active POTS splitter according to Claim 34 wherein the event is according to a predetermined schedule.

43. An active POTS splitter according to Claim 34 wherein the line test signal comprises a short-circuiting of the subscriber line.

44. An active POTS splitter according to Claim 34 wherein said splitter circuitry and said line test circuitry are implemented as a single integrated circuit.

45. An active POTS splitter according to Claim 44 further comprising:

a printed circuit board mounting said single integrated circuit; and

a line jack connected to said printed circuit board for insertion into a customer premises line socket.

46. In a telecommunications system using xDSL and POTS and comprising at least one central office connected to a plurality of subscribers by subscriber lines extending to each subscriber's premises, a method of measuring quality parameters relating to xDSL transmission on a subscriber line and comprising:

using an active POTS splitter including line test circuitry for generating a test signal on the subscriber line from a subscriber's premises based upon at least one of an

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event and receipt of a test request signal, and transmitting a unique identity code with the test signal;

performing measurements at the at least one central office on the test signal; and

deriving quality parameters for the subscriber line from the measurements.

*2bD*  
~~47. A method according to Claim 46 wherein the event comprises the subscriber line changing from a high impedance state to a low impedance state.~~

~~48. A method as claimed in Claim 46 wherein the event comprises a telephone switching from an on-hook state to an off-hook state.~~

*X*  
*2b*  
~~49. In a telecommunications system using xDSL and POTS and comprising at least one central office connected to a plurality of subscribers by subscriber lines extending to each subscriber's premises, a method of measuring quality parameters relating to xDSL transmission on a subscriber line and comprising:~~

~~using an active POTS splitter including line test circuitry for generating a test signal on the subscriber line from a subscriber's premises based upon receipt of a test request signal, and for transmitting a unique identity code based upon at least one of receipt of a test request signal and receipt of an identification request signal;~~

~~performing measurements at the at least one central office on the test signal; and~~

~~deriving quality parameters for the subscriber line from the measurements.~~

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50. A method according to Claim 49 wherein the test signal is for performance of a specific line test.

51. A method according to Claim 49 wherein the test signal is of a general form for use with a range of different line tests.

52. A method according to Claim 49 wherein the test signal comprises at least one pulse.

53. A method according to Claim 49 wherein the test signal comprises at least one step.

54. A method according to Claim 49 wherein the test signal comprises at least one chirp.

55. A method according to Claim 49 wherein the test signal comprises a series of sinusoidal signals of predetermined amplitude, each sinusoidal signal having a different frequency and the series thereof spanning a frequency range for which the line is to be tested.

56. A method according to Claim 55 wherein each sinusoidal signal has a predetermined duration to facilitate synchronization and measurement.

57. A method according to Claim 49 wherein the test signal is transmitted a predetermined time after receiving the test request signal.

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*Sub C1* 58. A method according to Claim 49 wherein the event comprises a predetermined schedule.

*Sub D1* 59. A method according to Claim 49 further comprising transmitting the unique identity code based upon receiving an identification request signal.

60. A method according to Claim 49 wherein the event comprises short-circuiting of the subscriber line.

61. A method according to Claim 49 further comprising collecting and storing results obtained from line tests at the at least one central office and deriving a log of line conditions for each subscriber line therefrom.

*X* 62. A method according to Claim 49 further comprising collecting and storing a plurality of results obtained from line tests at the at least one central office and averaging the plurality of results to obtain a composite result for each subscriber line.

63. A telecommunications system adapted to employ POTS and xDSL, comprising at least one central office connected to a plurality of subscriber premises by subscriber lines extending to respective subscriber premises, at least one of the subscriber premises having an active POTS splitter locating therein, the active POTS splitter comprising:

active splitter circuitry to be connected to a subscriber line for separating analog POTS signals from xDSL signals; and